Mountain States ACCUTEST LABORATORIES

06/18/12

Technical Report for

XTO Energy

FRU 297-8B

1106-06

Accutest Job Number: D35287

Sampling Date: 06/07/12

Report to:

KRW Consulting, Inc.
8000 West 14th Avenue
Lakewood, CO 80214
cburger@krwconsulting.com; dknudson@krwconsulting.com;
jhess@krwconsulting.com; crachak@krwconsulting.com;
ATTN: Dwayne Knudson

Total number of pages in report: **36**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)


Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6 7 8

# Table of Contents

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# Sample Summary

XTO Energy

**Job No:** D35287

FRU 297-8B
Project No: 1106-06

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| D35287-1 | 06/07/12 | 14:20 | CB | 06/09/12 | SO | Soil | CUT 2 MB DAY 4 (6/6/12) |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# CASE NARRATIVE / CONFORMANCE SUMMARY

| | | | |
|---|---|---|---|
| **Client:** | XTO Energy | **Job No** | D35287 |
| **Site:** | FRU 297-8B | **Report Date** | 6/15/2012 4:08:26 PM |

On 06/09/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.0 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D35287 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

## Volatiles by GC By Method SW846 8015B

**Matrix** SO **Batch ID:** GGB906

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35276-12MS, D35276-12MSD were used as the QC samples indicated.

## Extractables by GC By Method SW846-8015B

**Matrix** SO **Batch ID:** OP6047

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35286-2MS, D35286-2MSD were used as the QC samples indicated.

## Wet Chemistry By Method SM19 2540B M

**Matrix** SO **Batch ID:** GN15369

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

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## Sample Results

Report of Analysis

Accutest Laboratories

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CUT 2 MB DAY 4 (6/6/12) | | |
| **Lab Sample ID:** | D35287-1 | **Date Sampled:** | 06/07/12 |
| **Matrix:** | SO - Soil | **Date Received:** | 06/09/12 |
| **Method:** | SW846 8015B | **Percent Solids:** | 90.4 |
| **Project:** | FRU 297-8B | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | GB16308.D | 1 | 06/11/12 | SK | n/a | n/a | GGB906 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 5.0 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 12 | 6.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 120-82-1 | 1,2,4-Trichlorobenzene | 103% | | 60-140% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CUT 2 MB DAY 4 (6/6/12) | | |
| **Lab Sample ID:** | D35287-1 | **Date Sampled:** | 06/07/12 |
| **Matrix:** | SO - Soil | **Date Received:** | 06/09/12 |
| **Method:** | SW846-8015B SW846 3546 | **Percent Solids:** | 90.4 |
| **Project:** | FRU 297-8B | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | FD14253.D | 1 | 06/14/12 | AV | 06/13/12 | OP6047 | GFD750 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-DRO (C10-C28) | 127 | 7.4 | 4.8 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 71% | | 43-136% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

# CHAIN OF CUSTODY



ACCUTEST LABORATORIES
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # D35287

**Client / Reporting Information**

Company Name: KRW Consulting
Street Address: 8000 West 14th Street; Suite 200
City: Lakewood, CO 80214
Project Contact: Dwayne Knudson
Phone #: 970-488-1098
Sampler(s) Name(s): Craig Burger 970-488-1098

**Project Information**

Project Name: XTO FRU 297-8B
Street:
City: State:
Project #: 1106-06
Client Purchase Order #:
Project Manager: Joe Hess

**Billing Information ( If different from Report to)**

Company Name: XTO Energy
Street Address: 21459 CR 5
City: Rifle, CO 81650
Attention: Jessica Dooling

**Requested Analysis ( see TEST CODE sheet)**

TPH (DRO/GRO)

**Matrix Codes**

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

| Accutest Sample # | Field ID / Point of Collection | MEOH/DI Vial # | Collection Date | Collection Time | Sampled by | Matrix | # of bottles | Number of preserved Bottles: HCl | NaOH | HNO3 | H2SO4 | NONE | DI Water | MEOH | ENCORE | Bisulfate | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cut 2 MB Day 4 (6/6/12) | | 6-7-12 | 14:20 | CMB | SO | 2 | | | | | X | | | | | 01 |

**Turnaround Time ( Business days)**

Approved By (Accutest PM): / Date:

- [ ] Std. 10 Business Days
- [x] Std. 5 Business Days (By contract only)
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Emergency & Rush T/A data available VIA Lablink

**Data Deliverable Information**

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" ( Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [x] Report by PDF ONLY
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

**Comments / Special Instructions**

Please email to: KRW Piceance Team

**Sample Custody must be documented below each time samples change possession, including courier delivery.**

| | Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|---|
| 1 | | 6/8/12 | 6/8/12 | 2 | | 2 |
| 3 | | | 3 | 4 | | 4 |
| 5 | | | 5 | | | |

Custody Seal # FedEx — Intact / Not Intact — Preserved where applicable — On Ice — Cooler Temp. 4.0

# Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** D35287 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

**Date / Time Received:** 6/9/2012 9:15:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

**Project:** XTO FRU 297-8B **Airbill #'s:** FedEx

| Cooler Security | Y | or | N | | Y | or | N |
|---|---|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☑ | | ☐ | 3. COC Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☑ | | ☐ | 4. Smpl Dates/Time OK | ☑ | | ☐ |

| Cooler Temperature | Y | or | N |
|---|---|---|---|
| 1. Temp criteria achieved: | ☑ | | ☐ |
| 2. Cooler temp verification: | Infared gun | | |
| 3. Cooler media: | Ice (bag) | | |

| Quality Control Preservation | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | |
| 3. Samples preserved properly: | ☑ | | ☐ | |
| 4. VOCs headspace free: | ☐ | | ☐ | ☑ |

| Sample Integrity - Documentation | Y | or | N |
|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ |
| 2. Container labeling complete: | ☑ | | ☐ |
| 3. Sample container label / COC agree: | ☑ | | ☐ |

| Sample Integrity - Condition | Y | or | N |
|---|---|---|---|
| 1. Sample recvd within HT: | ☑ | | ☐ |
| 2. All containers accounted for: | ☑ | | ☐ |
| 3. Condition of sample: | Intact | | |

| Sample Integrity - Instructions | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | | ☑ | |
| 3. Sufficient volume rec'd for analysis: | ☑ | | ☐ | |
| 4. Compositing instructions clear: | ☐ | | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | | ☐ | ☑ |

Comments

Accutest Laboratories
V:(303) 425-6021
4036 Youngfield Street
F: (303) 425-6854
Wheat Ridge, CO
www/accutest.com

**D35287: Chain of Custody**
**Page 2 of 2**

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## GC Volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** D35287
**Account:** XTOKRWR XTO Energy
**Project:** FRU 297-8B

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GGB906-MB | GB16294.D | 1 | 06/11/12 | SK | n/a | n/a | GGB906 |



**The QC reported here applies to the following samples:** **Method:** SW846 8015B

D35287-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 10 | 5.0 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 120-82-1 | 1,2,4-Trichlorobenzene | 104% | 60-140% |

# Blank Spike Summary



**Job Number:** D35287
**Account:** XTOKRWR XTO Energy
**Project:** FRU 297-8B

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GGB906-BS | GB16295.D | 1 | 06/11/12 | SK | n/a | n/a | GGB906 |



**The QC reported here applies to the following samples:** **Method:** SW846 8015B

D35287-1

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 110 | 123 | 112 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 120-82-1 | 1,2,4-Trichlorobenzene | 121% | 60-140% |

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** D35287
**Account:** XTOKRWR XTO Energy
**Project:** FRU 297-8B

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| D35276-12MS | GB16297.D | 1 | 06/11/12 | SK | n/a | n/a | GGB906 |
| D35276-12MSD | GB16298.D | 1 | 06/11/12 | SK | n/a | n/a | GGB906 |
| D35276-12 | GB16296.D | 1 | 06/11/12 | SK | n/a | n/a | GGB906 |



**The QC reported here applies to the following samples:** **Method:** SW846 8015B

D35287-1

| CAS No. | Compound | D35276-12 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | | 170 | 184 | 108 | 194 | 114 | 5 | 70-130/30 |

| CAS No. | Surrogate Recoveries | MS | MSD | D35276-12 | Limits |
|---|---|---|---|---|---|
| 120-82-1 | 1,2,4-Trichlorobenzene | 108% | 110% | 103% | 60-140% |

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## GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 06/12/12 09:24

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16308.D\FID1A.CH Vial: 19
Signal #2 : Y:\1\DATA\061112\GB16308.D\FID2B.CH
Acq On : 11 Jun 2012 9:05 pm Operator: StephK
Sample : D35287-1, 50X Inst : GC/MS Ins
Misc : GC2904,GGB906,5.008,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 12 08:46:12 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jun 12 08:45:42 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

| | Compound | R.T. | Response | Conc | Units | |
|---|---|---|---|---|---|---|
| | **System Monitoring Compounds** | | | | | |
| 2) S | 1,2,4-Trichlorobenzene | 14.33 | 3239670 | 103.391 % | | m |
| 10) S | 1,2,4-Trichlorobenzene (P) | 14.33 | 18808000 | 115.722 % | | |
| | **Target Compounds** | | | | | |
| 1) H | TVH-Gasoline | 7.23 | 6641628 | <MDL | mg/L | |
| 4) T | Methyl-t-butyl-ether | 0.00 | 0 | N.D. | ug/L | d |
| 5) T | Benzene | 0.00 | 0 | N.D. | ug/L | d |
| 6) T | Toluene | 7.61 | 377147 | 0.952 | ug/L | |
| 7) T | Ethylbenzene | 10.25 | 126448 | 0.374 | ug/L | |
| 8) T | m,p-Xylene | 10.43 | 510230 | 1.024 | ug/L | |
| 9) T | o-Xylene | 0.00 | 0 | N.D. | ug/L | d |
| 11) T | Naphthalene | 14.52 | 662256 | 3.356 | ug/L | |

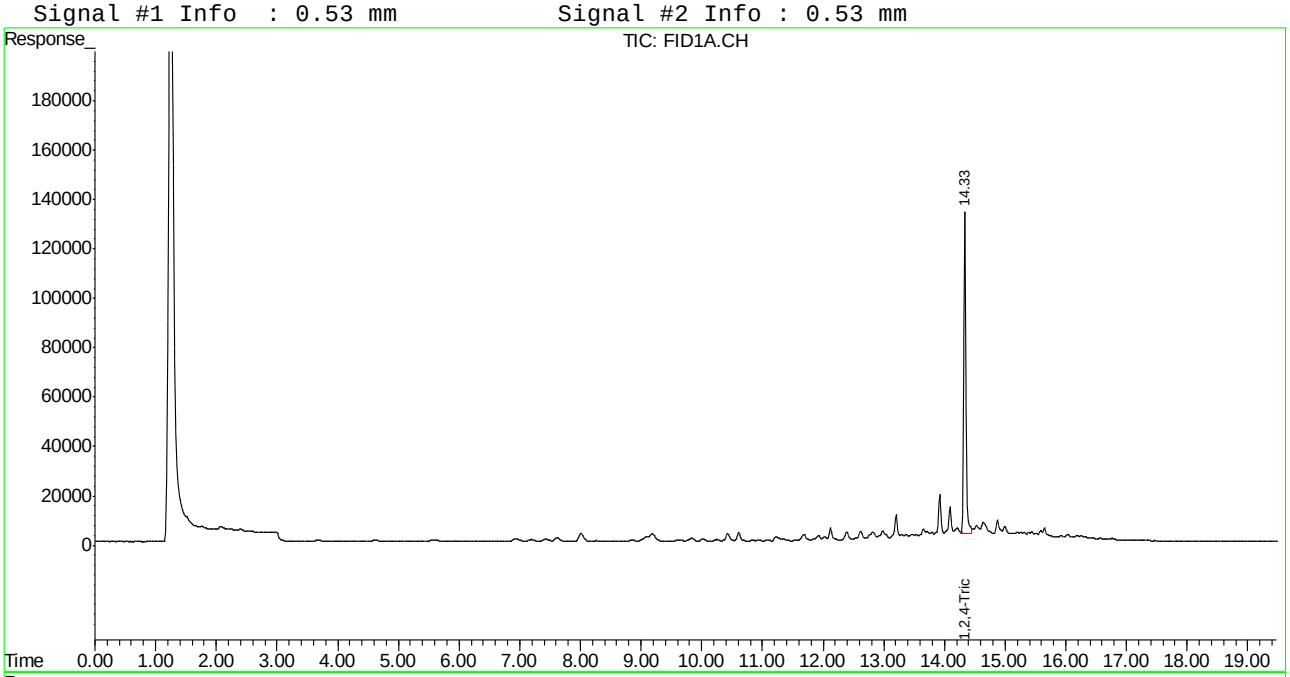
(f)=RT Delta > 1/2 Window (m)=manual int.

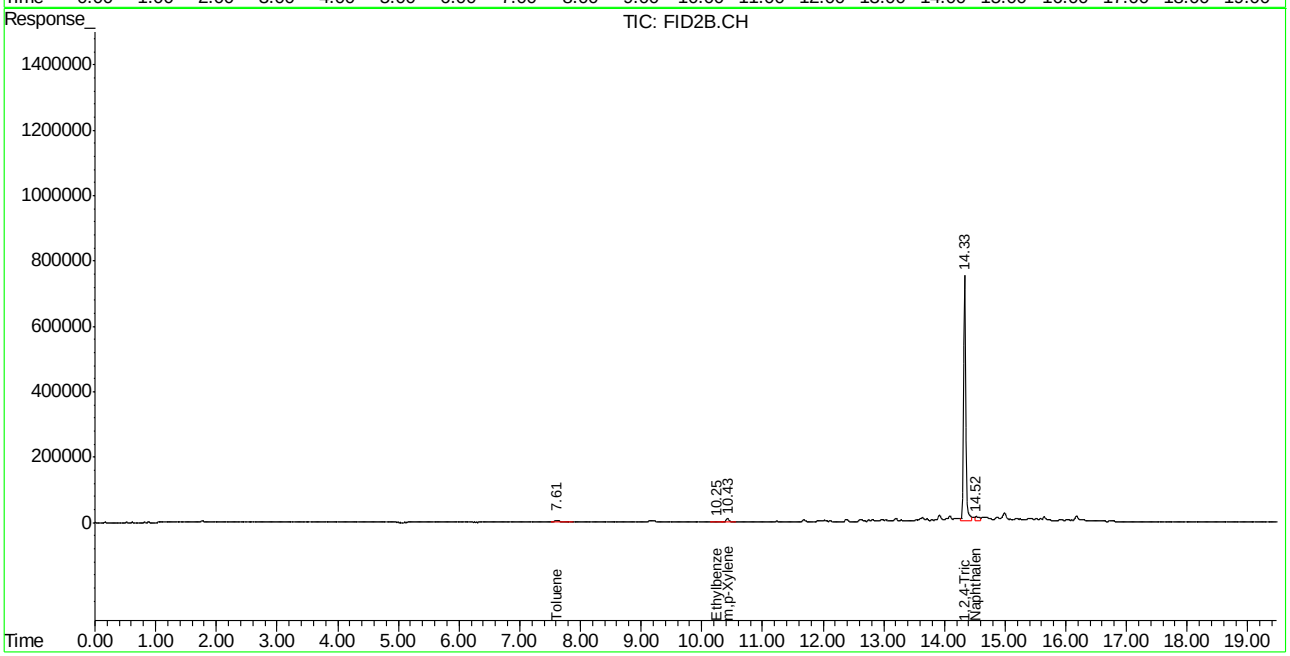
Quantitation Report (QT Reviewed)

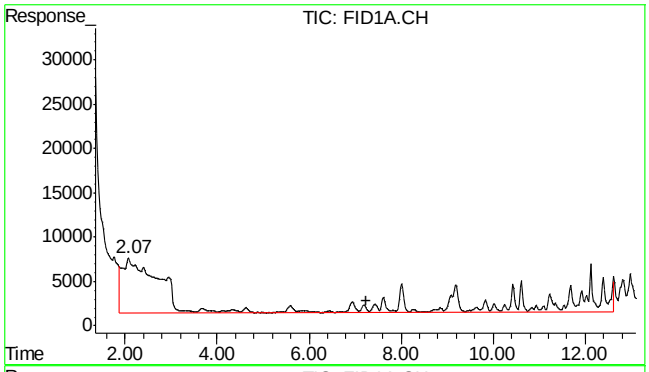
Signal #1 : Y:\1\DATA\061112\GB16308.D\FID1A.CH Vial: 19
Signal #2 : Y:\1\DATA\061112\GB16308.D\FID2B.CH
Acq On : 11 Jun 2012 9:05 pm Operator: StephK
Sample : D35287-1, 50X Inst : GC/MS Ins
Misc : GC2904,GGB906,5.008,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 12 7:51 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jun 12 08:45:42 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

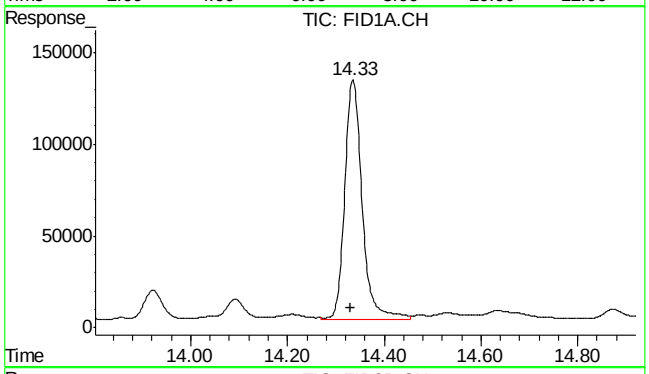




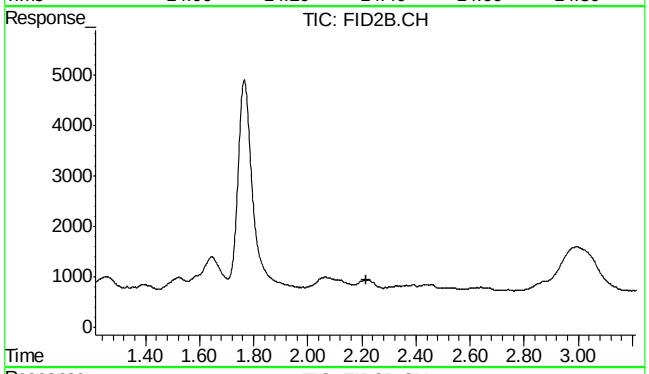

#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 6641628
Conc: N.D.



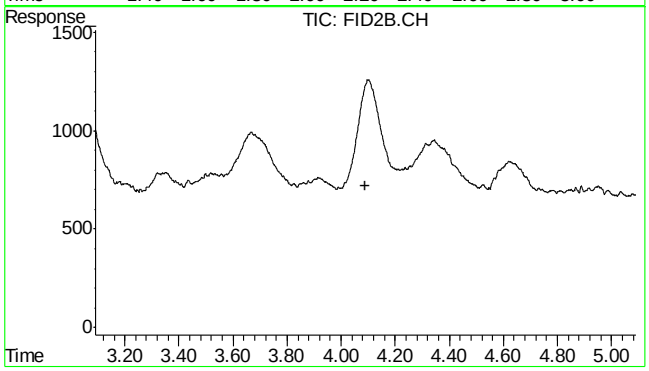

#2 1,2,4-Trichlorobenzene

R.T.: 14.335 min
Delta R.T.: 0.003 min
Response: 3239670
Conc: 103.39 % m



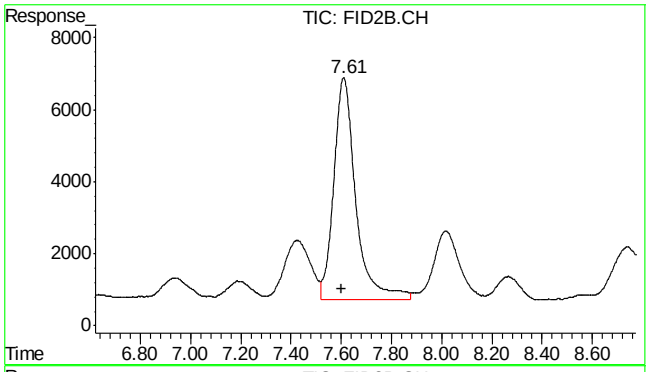

#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.215 min
Response: 0
Conc: N.D.



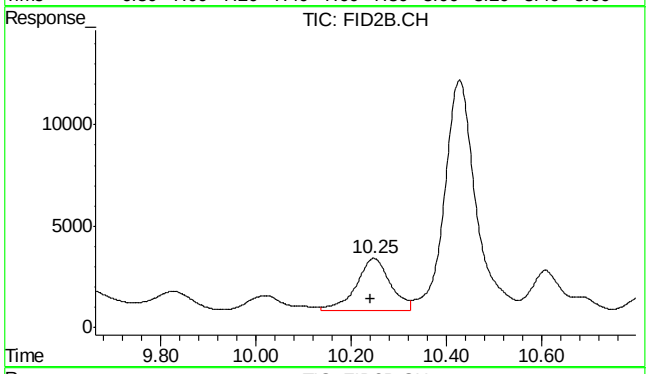

#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.090 min
Response: 0
Conc: N.D.



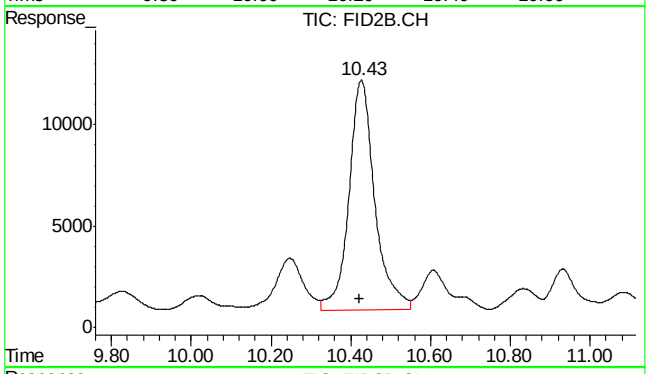

#6 Toluene

R.T.: 7.610 min
Delta R.T.: 0.008 min
Response: 377147
Conc: 0.95 ug/L



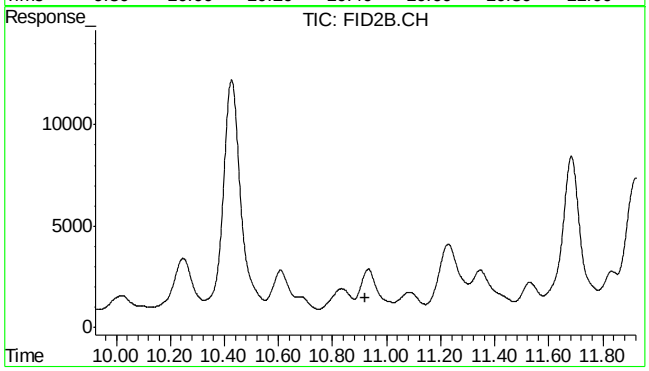

#7 Ethylbenzene

R.T.: 10.247 min
Delta R.T.: 0.007 min
Response: 126448
Conc: 0.37 ug/L



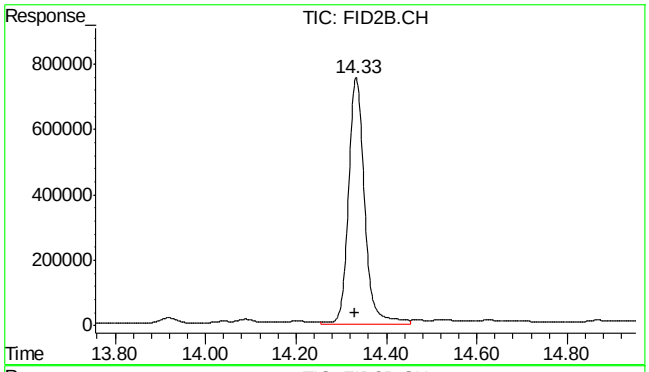

#8 m,p-Xylene

R.T.: 10.427 min
Delta R.T.: 0.005 min
Response: 510230
Conc: 1.02 ug/L



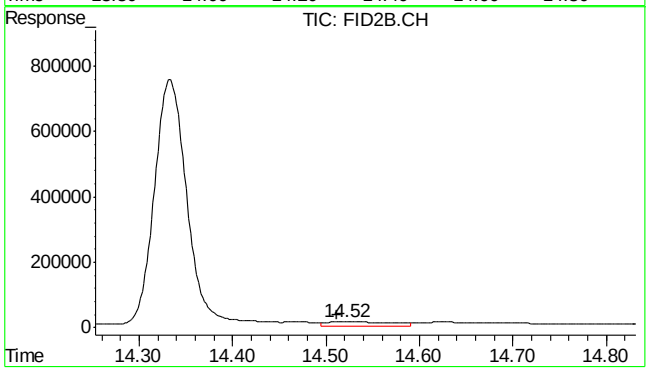

#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.922 min
Response: 0
Conc: N.D.




#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.333 min
Delta R.T.: 0.004 min
Response: 18808000
Conc: 115.72 %




#11 Naphthalene

R.T.: 14.523 min
Delta R.T.: 0.012 min
Response: 662256
Conc: 3.36 ug/L

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 06/12/12 09:24

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\061112\GB16294.D\FID1A.CH Vial: 5
Signal #2 : Y:\1\DATA\061112\GB16294.D\FID2B.CH
Acq On : 11 Jun 2012 12:51 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2904,GGB906,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 11 13:08:10 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Jun 11 13:03:48 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

| | Compound | R.T. | Response | Conc | Units | |
|---|---|---|---|---|---|---|
| | **System Monitoring Compounds** | | | | | |
| 2) S | 1,2,4-Trichlorobenzene | 14.35 | 3244057 | 103.531 % | | m |
| 10) S | 1,2,4-Trichlorobenzene (P) | 14.34 | 18276099 | 112.449 % | | |
| | **Target Compounds** | | | | | |
| 1) H | TVH-Gasoline | 7.23 | 4675842 | <MDL | mg/L | |
| 4) T | Methyl-t-butyl-ether | 0.00 | 0 | N.D. | ug/L | d |
| 5) T | Benzene | 0.00 | 0 | N.D. | ug/L | d |
| 6) T | Toluene | 7.63 | 181555 | 0.458 | ug/L | |
| 7) T | Ethylbenzene | 0.00 | 0 | N.D. | ug/L | d |
| 8) T | m,p-Xylene | 10.44 | 181324 | 0.123 | ug/L | |
| 9) T | o-Xylene | 0.00 | 0 | N.D. | ug/L | d |
| 11) T | Naphthalene | 14.52 | 215354 | 1.091 | ug/L | |

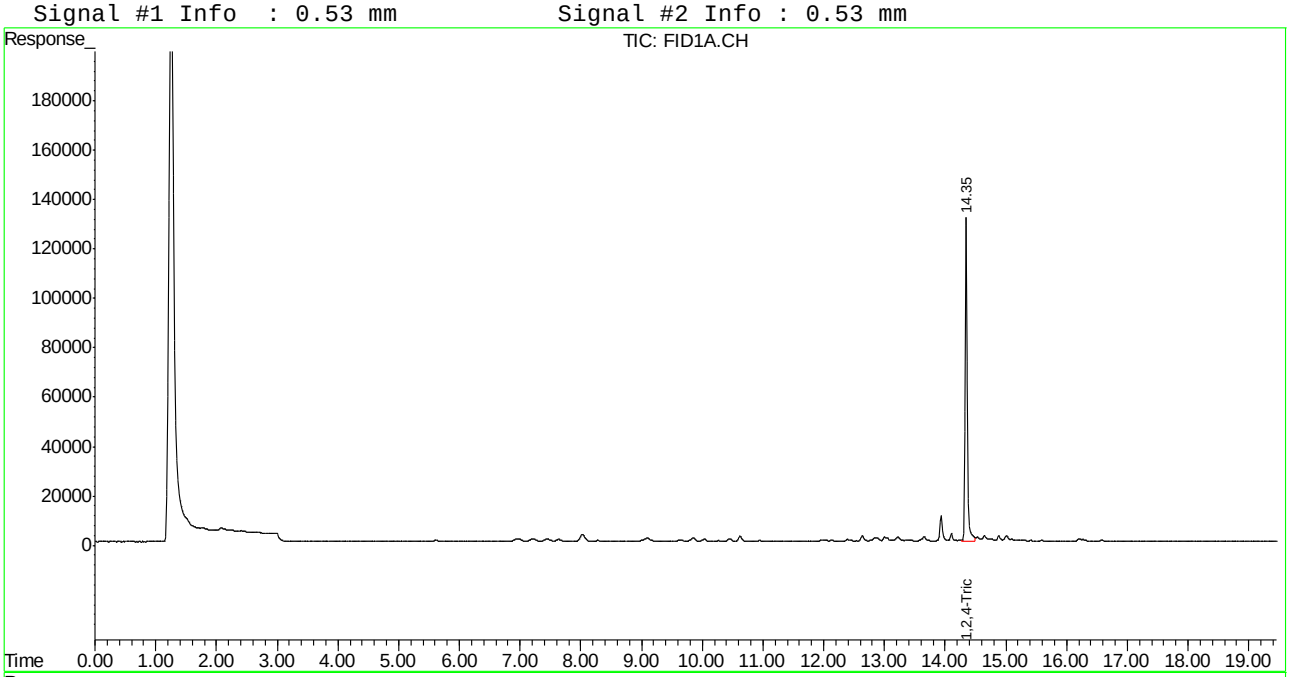
(f)=RT Delta > 1/2 Window (m)=manual int.

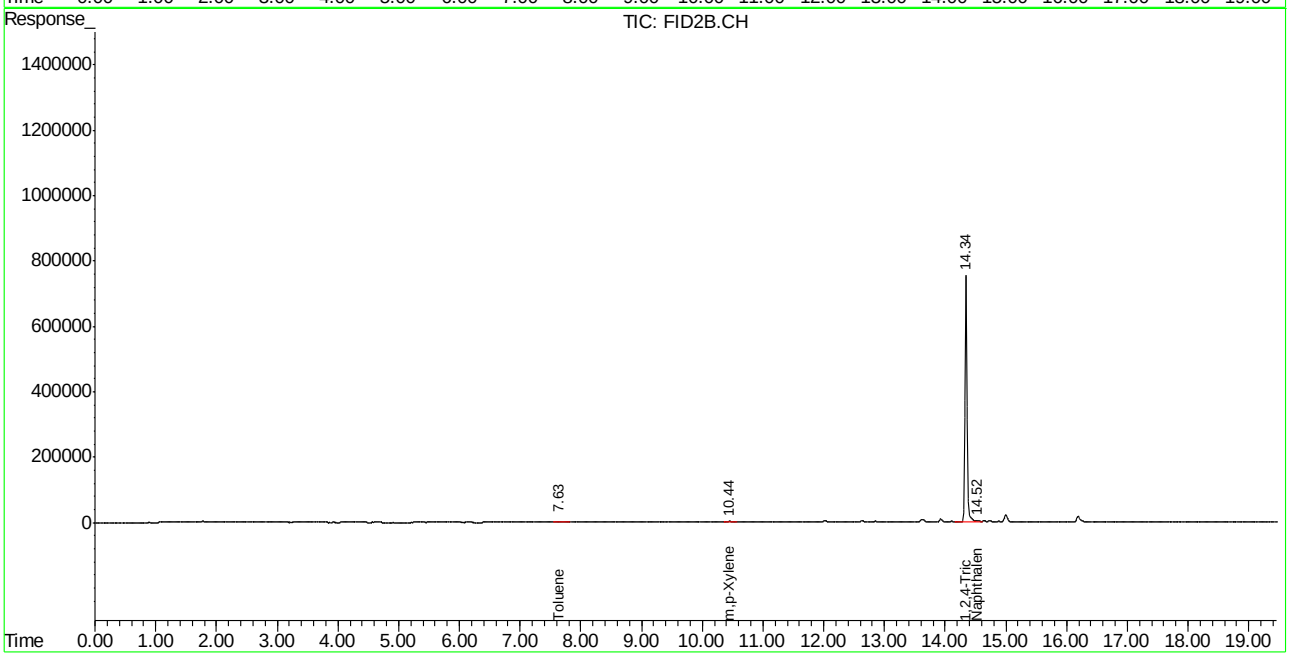
Quantitation Report (QT Reviewed)

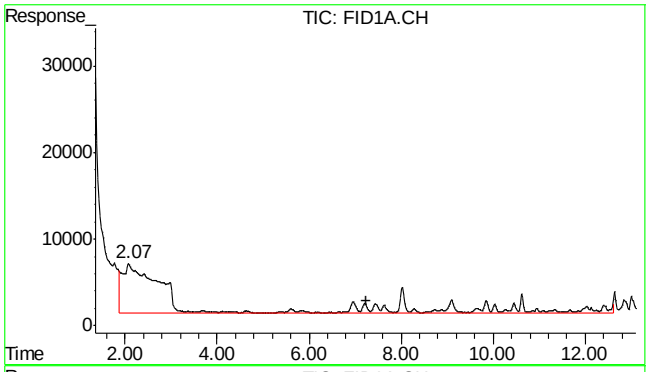
Signal #1 : Y:\1\DATA\061112\GB16294.D\FID1A.CH Vial: 5
Signal #2 : Y:\1\DATA\061112\GB16294.D\FID2B.CH
Acq On : 11 Jun 2012 12:51 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2904,GGB906,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 11 12:11 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Jun 11 13:03:48 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

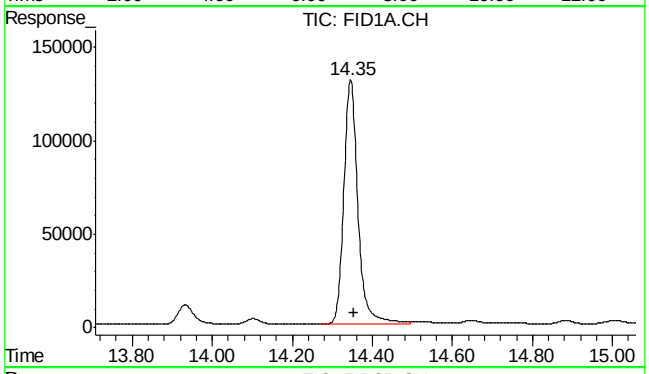




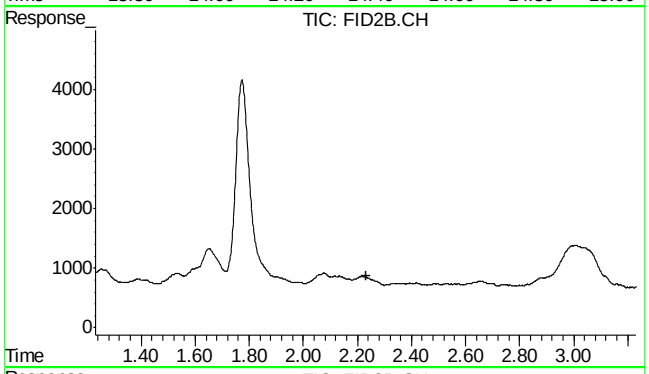

#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 4675842
Conc: N.D.



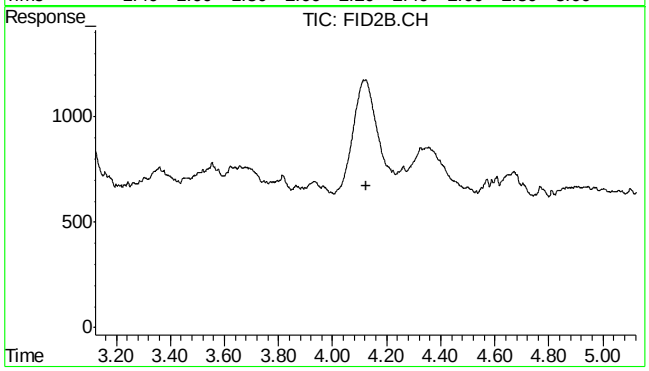

#2 1,2,4-Trichlorobenzene

R.T.: 14.345 min
Delta R.T.: -0.008 min
Response: 3244057
Conc: 103.53 % m



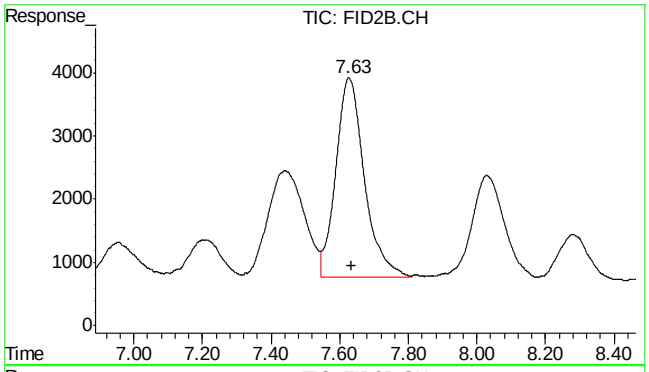

#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.231 min
Response: 0
Conc: N.D.



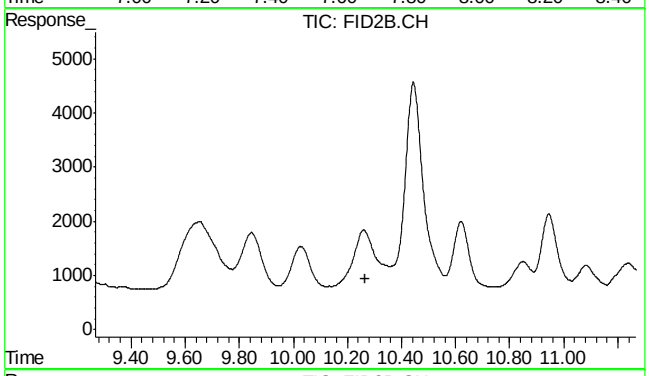

#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.123 min
Response: 0
Conc: N.D.



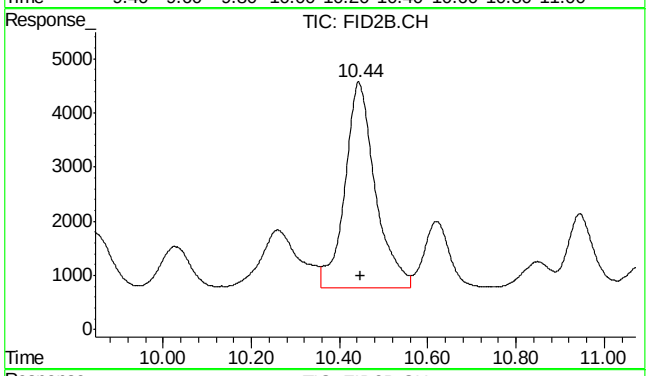

#6 Toluene

R.T.: 7.627 min
Delta R.T.: -0.009 min
Response: 181555
Conc: 0.46 ug/L



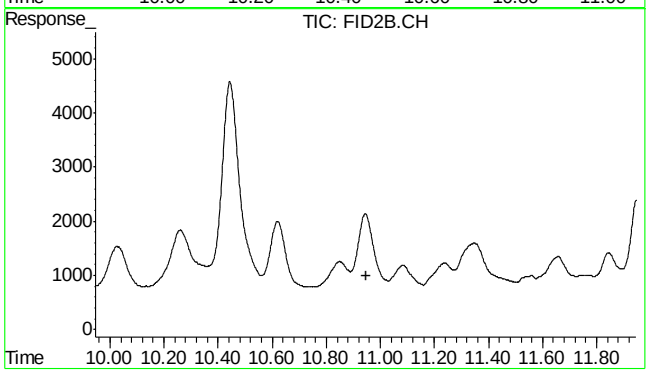

#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.267 min
Response: 0
Conc: N.D.



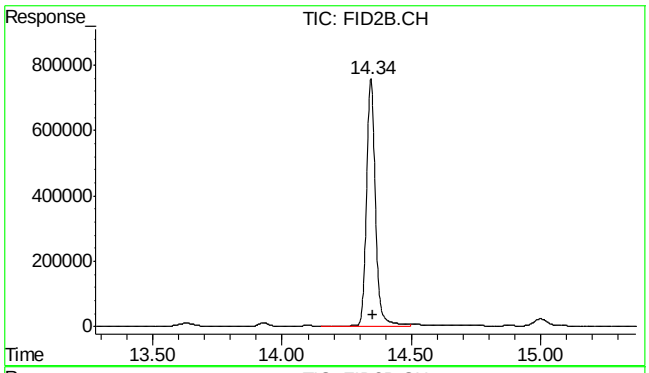

#8 m,p-Xylene

R.T.: 10.444 min
Delta R.T.: -0.004 min
Response: 181324
Conc: 0.12 ug/L



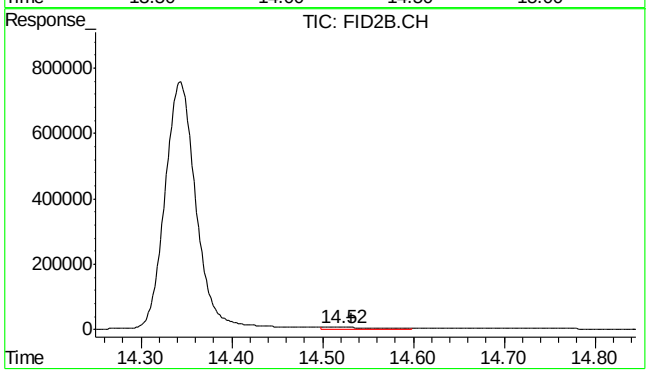

#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.946 min
Response: 0
Conc: N.D.




#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.344 min
Delta R.T.: -0.007 min
Response: 18276099
Conc: 112.45 %




#11 Naphthalene

R.T.: 14.521 min
Delta R.T.: -0.011 min
Response: 215354
Conc: 1.09 ug/L

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## GC Semi-volatiles

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** D35287
**Account:** XTOKRWR XTO Energy
**Project:** FRU 297-8B

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP6047-MB | FD14227.D | 1 | 06/14/12 | AV | 06/13/12 | OP6047 | GFD750 |

**The QC reported here applies to the following samples:** **Method:** SW846-8015B

D35287-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-DRO (C10-C28) | ND | 6.7 | 4.3 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 79% | 43-136% |

# Blank Spike Summary



**Job Number:** D35287
**Account:** XTOKRWR XTO Energy
**Project:** FRU 297-8B

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP6047-BS | FD14229.D | 1 | 06/14/12 | AV | 06/13/12 | OP6047 | GFD750 |

**The QC reported here applies to the following samples:** **Method:** SW846-8015B

D35287-1

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH-DRO (C10-C28) | 667 | 417 | 63 | 58-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 70% | 43-136% |

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** D35287
**Account:** XTOKRWR XTO Energy
**Project:** FRU 297-8B

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP6047-MS | FD14231.D | 1 | 06/14/12 | AV | 06/13/12 | OP6047 | GFD750 |
| OP6047-MSD | FD14233.D | 1 | 06/14/12 | AV | 06/13/12 | OP6047 | GFD750 |
| D35286-2 | FD14235.D | 1 | 06/14/12 | AV | 06/13/12 | OP6047 | GFD750 |

**The QC reported here applies to the following samples:** **Method:** SW846-8015B

D35287-1

| CAS No. | Compound | D35286-2 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| | TPH-DRO (C10-C28) | 7.99 | | 756 | 450 | 58 | 370 | 48 | 20 | 20-183/43 |

| CAS No. | Surrogate Recoveries | MS | MSD | D35286-2 | Limits |
|---|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 65% | 59% | 70% | 43-136% |

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GC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 06/15/12 10:37

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14253.D Vial: 16
Acq On : 6-14-2012 06:40:25 PM Operator: ashleyv
Sample : D35287-1 Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 15 08:56:04 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

| | Compound | R.T. | Response | Conc | Units | |
|---|---|---|---|---|---|---|
| | System Monitoring Compounds | | | | | |
| 1) S | O-Terphenyl | 9.34 | 67031002 | 1424.349 | mg/L | m |
| | Target Compounds | | | | | |
| 2) H | TPH-DRO (c10-c28) | 7.19 | 146951917 | 3437.633 | mg/L | |

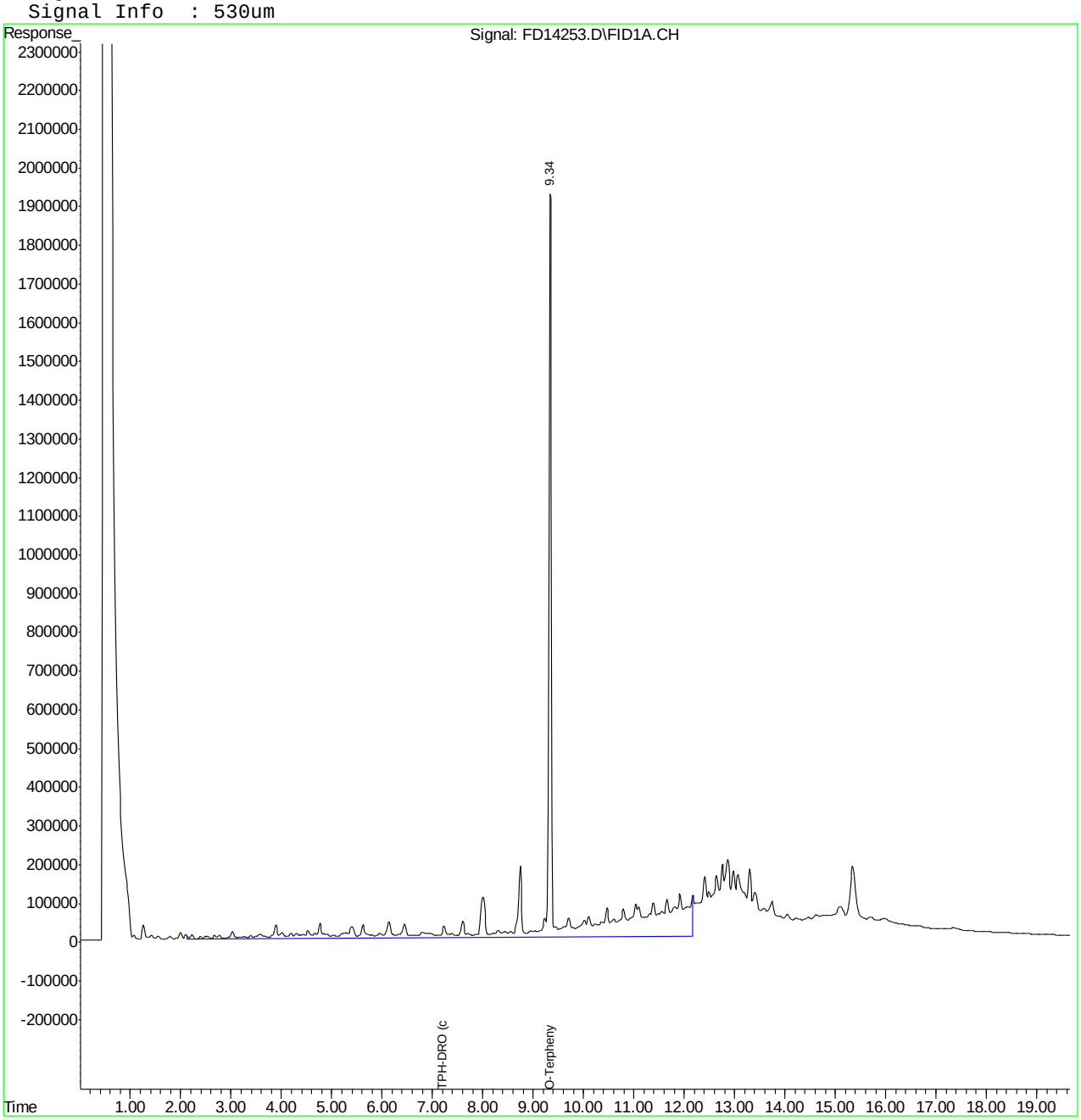
(f)=RT Delta > 1/2 Window (m)=manual int.

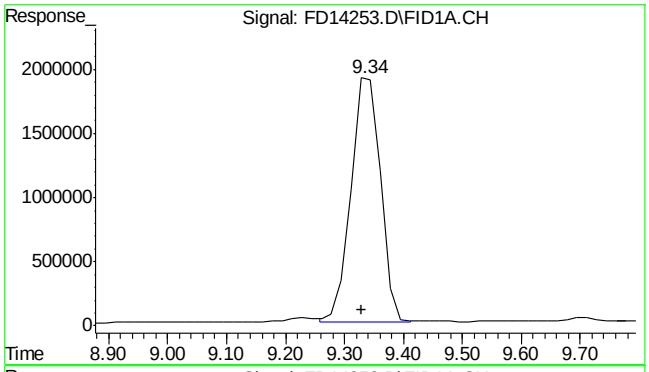
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14253.D Vial: 16
Acq On : 6-14-2012 06:40:25 PM Operator: ashleyv
Sample : D35287-1 Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 15 8:57 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

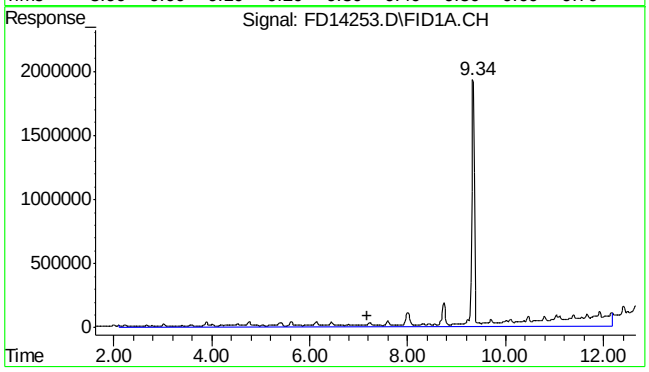
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um






#1 O-Terphenyl

R.T.: 9.336 min
Delta R.T.: 0.006 min
Response: 67031002
Conc: 1424.35 mg/L m




#2 TPH-DRO (c10-c28)

R.T.: 7.190 min
Delta R.T.: 0.000 min
Response: 146951917
Conc: 3437.63 mg/L m

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 06/15/12 10:37

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14227.D Vial: 3
Acq On : 14 Jun 2012 12:48 pm Operator: ashleyv
Sample : OP6047-MB Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 15:34:59 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

| | Compound | R.T. | Response | Conc | Units | |
|---|---|---|---|---|---|---|
| | System Monitoring Compounds | | | | | |
| 1) S | O-Terphenyl | 9.35 | 74347937 | 1579.827 | mg/L | m |
| | Target Compounds | | | | | |
| 2) H | TPH-DRO (c10-c28) | 7.19 | 2239439 | 52.387 | mg/L | |

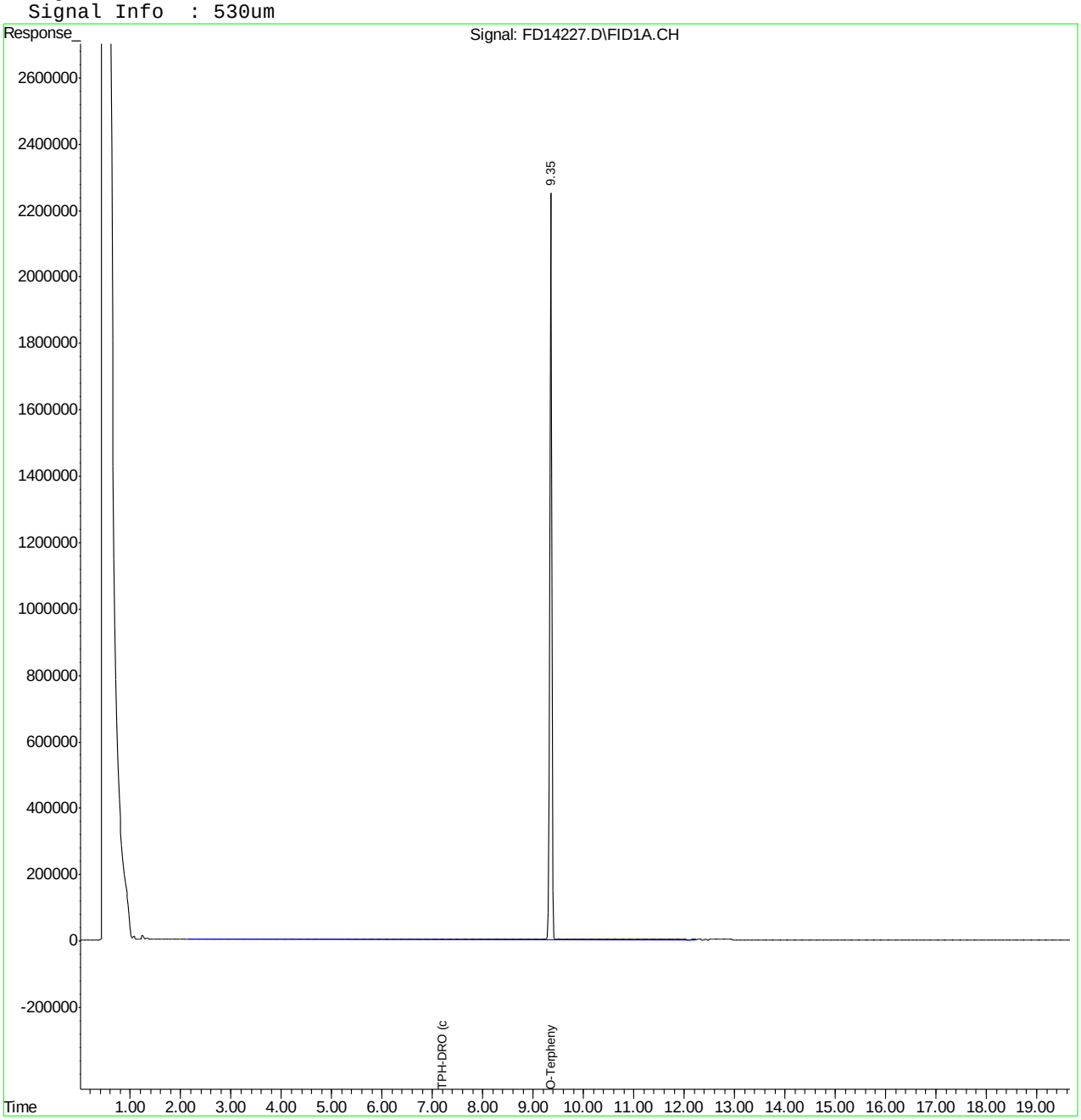
(f)=RT Delta > 1/2 Window (m)=manual int.
FD14227.D DRO-GFD740F.M Fri Jun 15 09:22:18 2012 GC Page 1

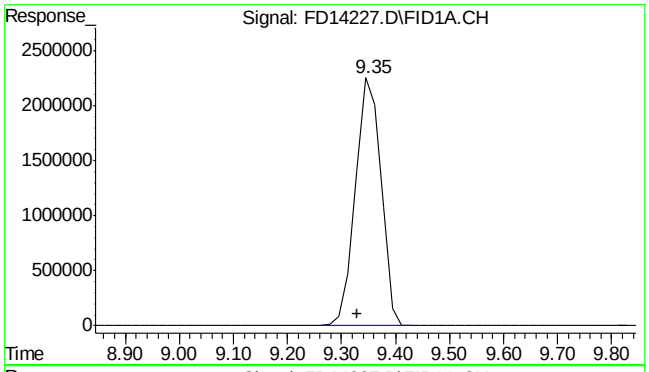
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\JUNE\FD061412\FD14227.D Vial: 3
Acq On : 14 Jun 2012 12:48 pm Operator: ashleyv
Sample : OP6047-MB Inst : FID5
Misc : OP6047,GFD750,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 14 15:35 2012 Quant Results File: DRO-GFD740F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD740F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Mon Jun 11 09:22:41 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

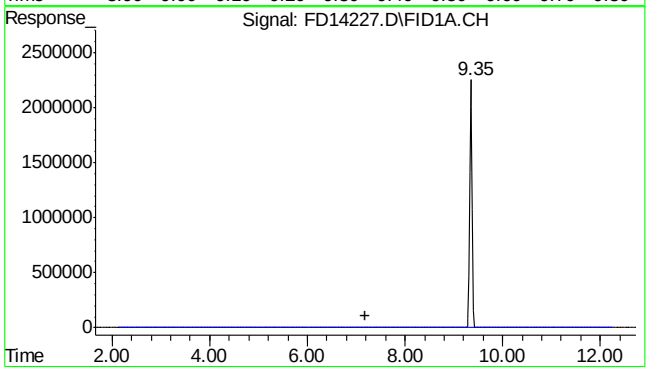
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um






#1 O-Terphenyl

R.T.: 9.349 min
Delta R.T.: 0.019 min
Response: 74347937
Conc: 1579.83 mg/L m




#2 TPH-DRO (c10-c28)

R.T.: 7.190 min
Delta R.T.: 0.000 min
Response: 2239439
Conc: 52.39 mg/L m